Claims

[c1] 1. A generator gas shield comprising an annular ring body having an outer radially extending flange terminating at a first free end of a first diameter; a curved inlet portion; a substantially axial portion surrounding a center opening, and a curved outlet portion terminating at a second free end of a second diameter smaller than said first diameter.

[c2] 2. The generator gas shield of claim 1 wherein said curved outlet portion is provided with a plurality of circumferentially spaced ventilation holes.

[c3] 3. The generator gas shield of claim 1 wherein said axial portion includes a seal insert.

[c4] 4. The generator gas shield of claim 3 wherein said seal insert is formed with one or more radially inwardly directed seal teeth.

[c5] 5. A generator comprising a rotor and a stator, and an axial flow fan, the stator having an endwinding region including circumferentially spaced armature bars arranged about the rotor, with a radial cooling gap between the stator and rotor; the armature bars terminating at loops enclosed within a corresponding number of series loop caps; and an annular gas shield having an outer radially extending flange secured to a section plate of said stator; a curved inlet portion; an axial portion defining a center opening surrounding said axial flow fan and including a seal insert adapted to cooperate with and establish a seal with blades of said axial flow fan; and a curved outlet portion terminating at a location proximate said armature bars.

[c6] 6. The generator of claim 5 wherein said curved outlet portion is provided with a plurality of circumferentially spaced ventilation holes.

[c7] 7. The generator of claim 6 wherein said ventilation holes are located so as to be adjacent said series loop caps.

[c8] 8. The generator of claim 6 wherein said curved outlet portion establishes a flow path in a first direction toward a gap between the rotor and the stator, and wherein said ventilation holes establish a flow path in a second direction

counter to said first direction.

[c9] 9. The generator of claim 8 wherein said ventilation holes are arranged at an angle of between about 40-70 ° relative to a horizontal rotor axis.

[c10] 10. A method of cooling armature bars in a generator comprising a rotor and a stator, and an axial flow fan, the stator having an endwinding region including circumferentially spaced armature bars arranged about the rotor, with a radial cooling gap between the stator and rotor; the armature bars terminating at loops enclosed within a corresponding number of series loop caps; the method comprising:

a) providing an axial flow fan radially inward of the series loop caps to direct cooling air axially into said endwinding region;

b) directing cooling air from said axial flow fan along a smooth surface to said armature bars; and

c) providing nozzles in said smooth surface adjacent said series loop caps to impingement cool said series loop caps with the cooling air.

[c11] 11. The method of claim 10 wherein said nozzles are arranged at an angle of between about 40-70 ° relative to a horizontal rotor axis.